CDP-M25

SERVICE MANUAL

AEP Model

Model CDP-M25 is almost same as CDP-M35.
As only the difference from CDP-M35 is described in this manual, please refer CDP-M35 service manual for the other sections.

• SECTION 3 EXPLODED VIEWS AND PARTS LIST

Page on CDP-M35 Service Manual	No.	Part No.	Description
14	2	X-4917-549-1	(GRAY) . . . . . PANEL ASSY, FRONT
	2	X-4917-550-1	(BLACK) . . . . PANEL ASSY, FRONT
	4	4-922-609-41	(GRAY) . . . . . PANEL, LOADING
	4	4-922-609-51	(BLACK) . . . . PANEL, LOADING
15	61	4-918-649-01	PLATE, INDICATION

• SECTION 4 ELECTRICAL PARTS LIST

ACCESSORY & PACKING MATERIAL

Page on CDP-M35 Service Manual	Part No.	Description
19	3-786-235-11	MANUAL, INSTRUCTION
	3-786-235-41	MANUAL, INSTRUCTION
	*4-922-657-11	INDIVIDUAL CARTON

MICROFILM

9-953-353-11

Sony Corporation
Audio Group

COMPACT DISC PLAYER

SONY®

English
88F0543-1
Printed in Japan
© 1988. 6
Published by A/V Engineering Service Dept.

CDP-M35

SERVICE MANUAL

Canadian Model
AEP Model
UK Model
E Model
Saudi Arabia Model

713581

CE01

SPECIFICATIONS

Compact disc player

System	Compact disc digital audio system
Laser	Semiconductor laser (λ = 780nm)
Emission duration	Continuous
Laser output	Max. 0.4 mW This output is the value measured at a distance of about 1.6 mm from the objective lens surface on the Optical Pick-up Block.
Frequency response	2 Hz – 20 kHz (±0.5 dB)
Signal to noise ratio	More than 100 dB
Dynamic range	More than 88 dB
Harmonic distortion	Less than 0.05% (1kHz)
Wow and flutter	Below measurable limit
Outputs	LINE OUT (phono jacks) Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms
Channel separation	More than 95 dB (1kHz)

General

Power requirements	Canadian model: 120 V AC, 60 Hz UK model: 240 V AC, 50 Hz AEP model: 220 V AC, 50 Hz E, Saudi Arabian model: 110 – 120 or 220 – 240 V AC, adjustable, 50/60 Hz
Power consumption	10 W
Dimensions (approx.) (w/h/d)	355 x 80 x 275 mm (14 x 3¼ x 10⅞ inches) including projecting parts and controls
Weight (approx., net)	3.0 kg (6 lbs 10 oz)

Supplied accessories

AC power cord	1
Audio signal connecting cord	1 (2 phono plugs – 2 phono plugs)

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

MICROFILM

COMPACT DISC PLAYER

SONY®

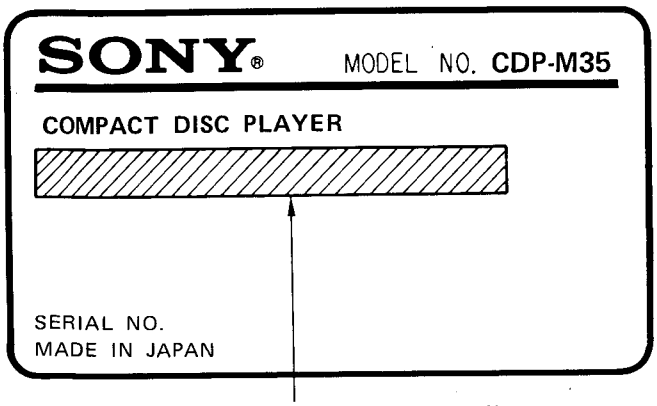
MC-Service

AUD

SERVICING NOTES

MODEL IDENTIFICATION

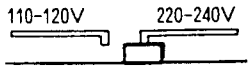
– Specifications Labels –



Canadian model: AC: 120 V ~ 60 Hz 10 W
AEP model: AC: 220 V ~ 50/60 Hz 10 W
UK model: AC: 240 V ~ 50/60 Hz 10 W
E, Saudi Arabian model:
AC: 120, 220, 240 V ~ 50/60 W 10 W

E model

110 - 120, 220 - 240 V AC
(Adjustable using the voltage selector.)



NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ADVARSEL!!

Under service må øjnene ikke komme nær objektiv-linsen på den optiske pick-up enhed. I tilfælde af at det er nødvendigt at kontrollere udsendelsen af laserlys, skal det ske i en afstand af mere end 25 cm fra den optiske pick-up.

CLASS 1
LASER PRODUCT

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

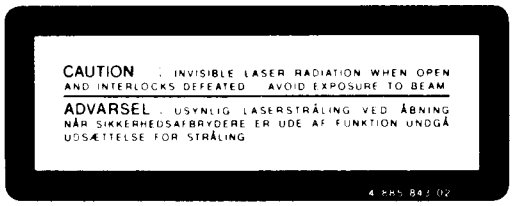
WARNING !!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 25 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

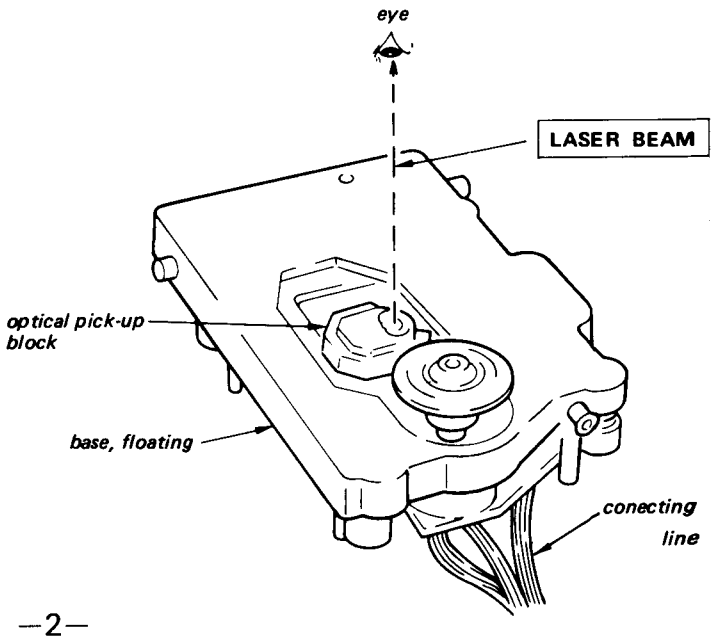
LASER ADVARSEL MÆRKNING

Følgende mærkning findes indvendig i apparatet:

1. Advarsel Mærkning


CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED AVOID EXPOSURE TO BEAM
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÅLING

VAROITUS: Laite sisältää, laserdiodin, joka lähettää (näkymätöntä) silmille vaarallista lasersateilyä.



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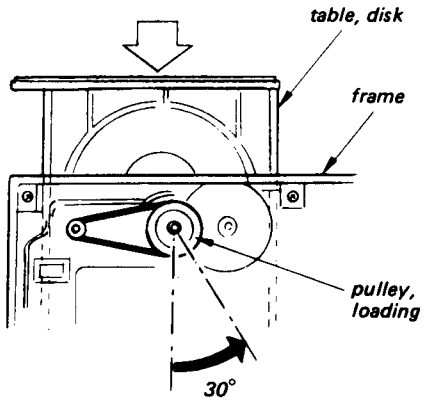
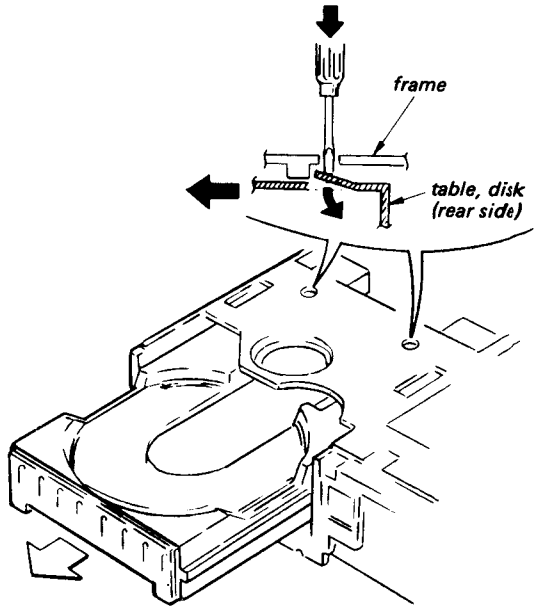
NOTES ON REPAIR

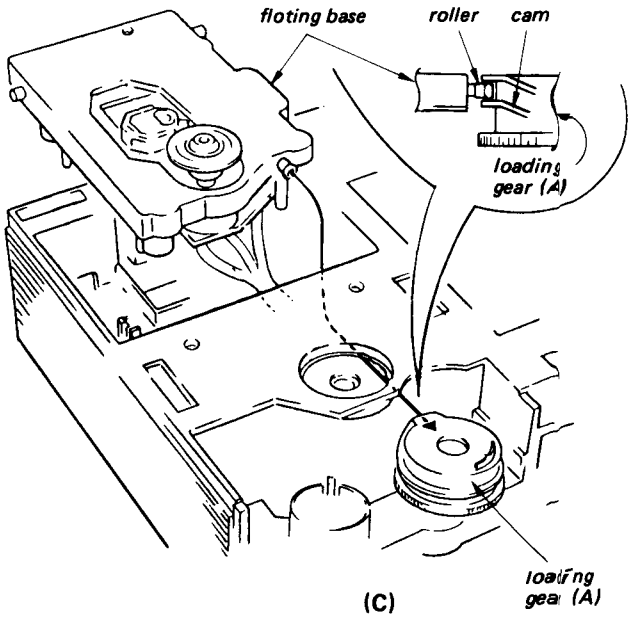
- When removing the disk-table, put the small screwdriver into the hole.
  Pull off the disk-table toward you while pushing the screwdriver. See figure (A).
- When re-assembling the disk-table, rotate the loading pulley by 30-degree in the direction of the arrow by finger, and put the table slowly. See figure (B).
- When re-assembling the floating base, set it so that the floating-base roller is engaged with the cam of the loading gear (A). See figure (C).



(B)



(A)



(C)

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

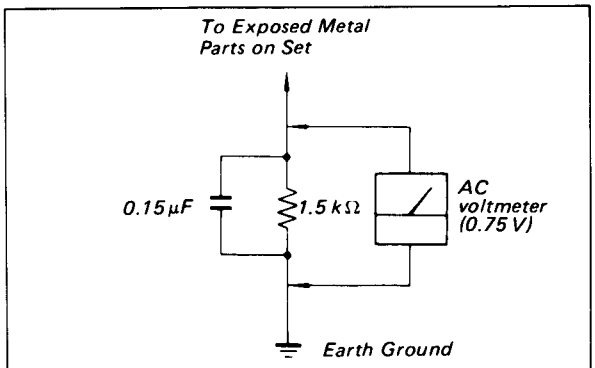
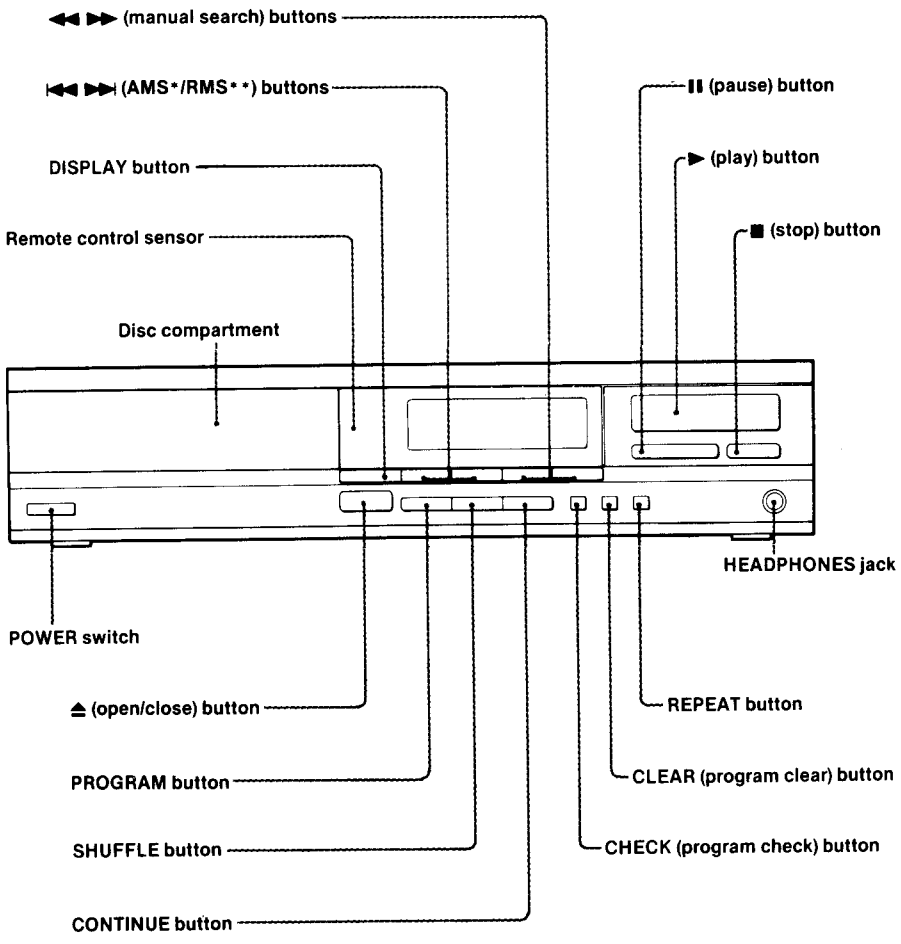


Fig. A. Using an AC voltmeter to check AC leakage.

LOCATION AND FUNCTION OF CONTROLS



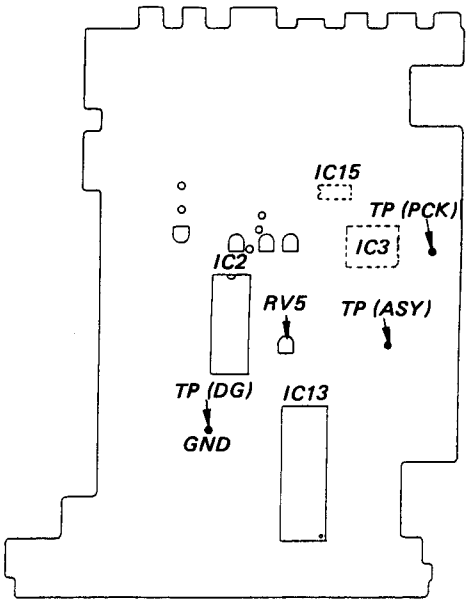
SECTION 1
ELECTRICAL ADJUSTMENTS

1. Perform adjustments in the order given.
2. Use YEDS-18 (Part No. 3-702-101-01) disc unless otherwise indicated.
3. Use the oscilloscope with more than 10 MΩ impedance.

RF PLL Free-run Frequency Check

1. Ground both test points TP (ASY).
2. Press OPEN/CLOSE button and open the disk holder.
3. Check for 4.3218 MHz at test point TP (PCK) using a frequency counter. If not, adjust RV5.

Adjustment Location: main board

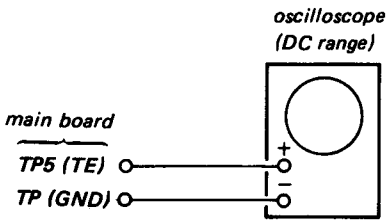


– Component Side –

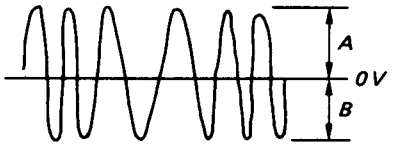
E-F Balance Adjustment

This adjustment should be made when replacing TOP (T-type Optical Pick-up).

Procedure:

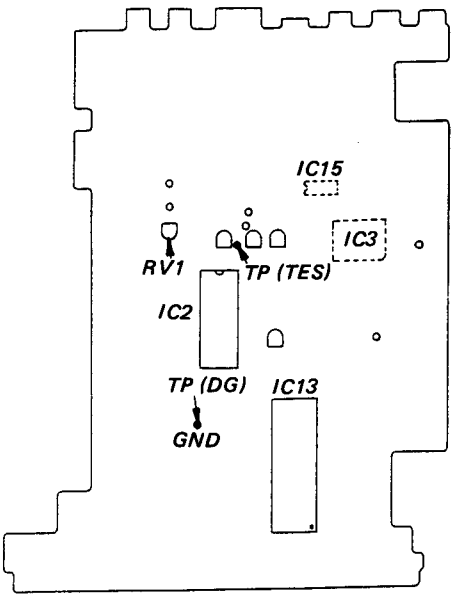


1. Connect oscilloscope to test point TP (TES) and ground.
2. Turn POWER switch on.
3. Put disc (YEDS-18) in and press ▷ button.
4. Press ◀◀ FF or ▶▶ REW botton.
5. Adjust RV1 for a vertically-symmetrical waveform as shown below. (A = B)



VOLT/DIV: 1 V
TIME/DIV: 1 ms

Adjustment Location: main board



– Component Side –

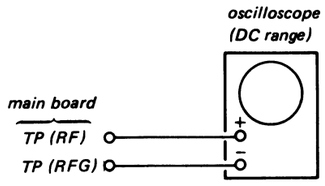
CDP-M35

REFERENCE

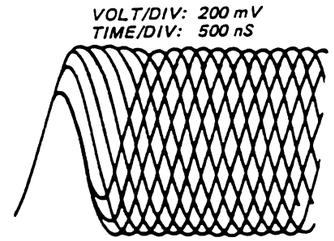
Focus Bias Adjustment

This adjustment should be made when replacing TOP (T-type Optical Pick-up).

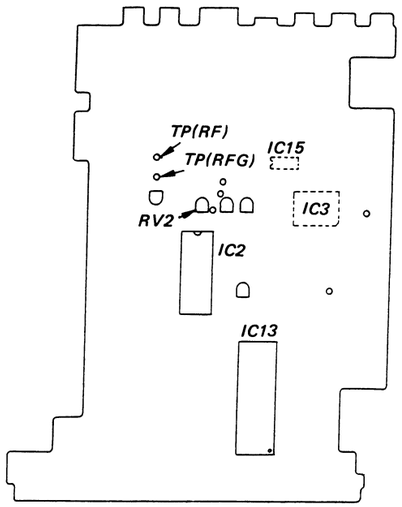
Procedure:



1. Connect oscilloscope to test points TP (RF) and TP (RFG).
2. Turn POWER switch on.
3. Put disc (YEDS-18) in and press button.
4. Adjust RV2 for an optimum waveform eye pattern or so that the peak is maximum. Optimum eye pattern means that shape "◇" can be clearly distinguished at the center of the waveform.



Adjustment Location: main board



– Component Side –

Focus/Tracking Gain Adjustment

A frequency response analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

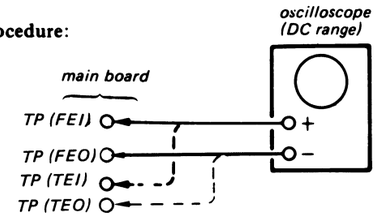
Symptoms \ Gain	Focus	Tracking
• The time until music starts becomes longer for STOP →▷PLAY or automatic selection (⏮ ⏭ buttons pressed. (Normally takes about 2 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP→▷PLAY or automatic selection (⏮ ⏭ buttons pressed.)	–	low
• Disc table opens shortly after STOP→▷PLAY.	low or high	–
• Sound is interrupted during PLAY. Or time counter display stops progressing.	–	low
• More poise during 2-axis device operation.	high	high

The following is a simple adjustment method.

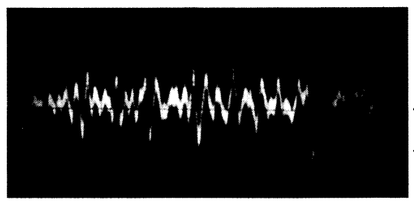
– Simple Adjustment –

Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:

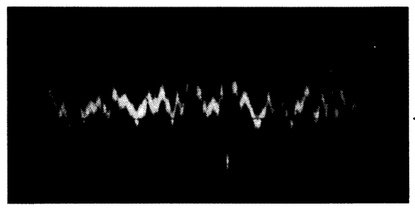


1. Keep the set horizontal.
   (If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.)
2. Insert disc (YEDS-18) and press PLAY button.
3. Connect oscilloscope to main amp board TP (FEI), TP (FEO).
4. Adjustment RV3 to that the waveform is as shown in the figure below. (focus gain adjustment)

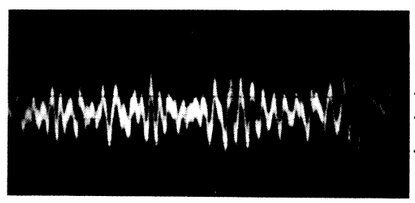


- Incorrent Examples (DC level changes more than on adjusted waveform)

low focus gain



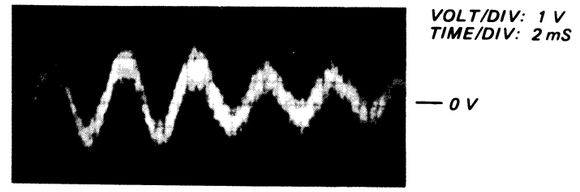
high focus gain



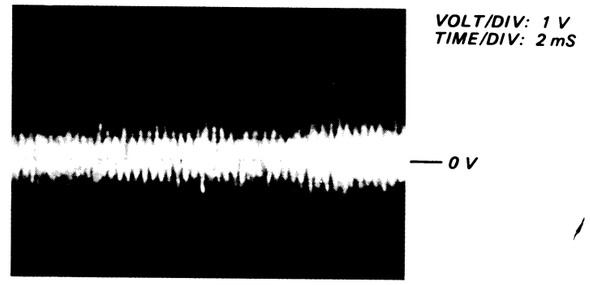
5. Connect oscilloscope to main board TP (TEI), TP (TEO).
6. Adjust RV4 so that the waveform is as shown in the figure below. (tracking gain adjustment)

- Incorrect Examples (fundamental wave appears)

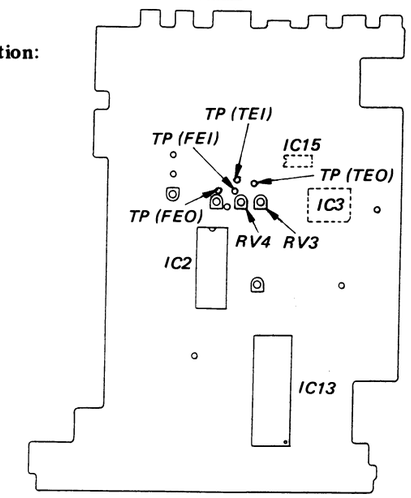
low tracking gain



high tracking gain
(higher fundamental wave than for low gain)



Adjustment Location:
main board

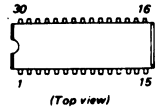


– Component Side –

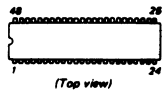
SECTION 2
DIAGRAMS

• Semiconductor Lead Layouts

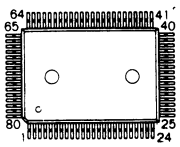
CXA1081S



CXA1182S

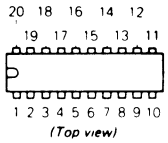


CXD1125Q

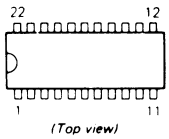


MARKING SIDE VIEW

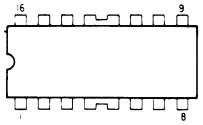
CXD1161P-1



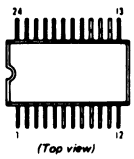
CXD1162P



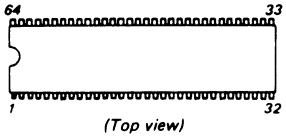
LA6520



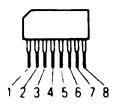
LC9600P-144



MSC6458-18SS

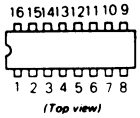


M5218L



M5231TL

M5290P-16
TA8406P

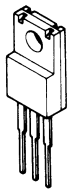


μPC4570HA

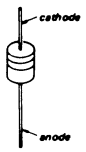
2SA1345
2SC3399
2SC3402

2SB1013
2SC3622

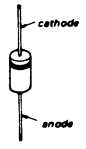
2SB1274SA-Q
2SD1913SA-Q



RD5.1ES-B



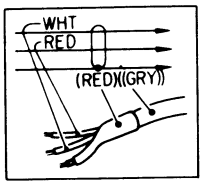
RD6.8ES-B
1SS132
10E2



Note on Mounting Diagram:

Note:

- Color code or sleeving over the end of the jacket.



- ○—— : parts extracted from the component side.

Note on Schematic Diagram:

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.
- ▬▬ : B+ bus.
- ▬ ▬ : B− bus.
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark: STOP
  ( ): PLAY
- Voltages are taken with a VOM (50 kΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- ——▶ : Signal path.
- Switch

Ref. No.	Switch	Position
SW1	POWER	OFF
SW2	VOLTAGE SELECTOR	220–240 V
SW3	CLEAR	OFF
SW4	OPEN/CLOSE	OFF
SW5	REPEAT	OFF
SW6	PLAY	OFF
SW7	PROGRAM	OFF
SW8	SEARCH REVERSE	OFF
SW9	AMS REVERSE	OFF
SW10	AUTO SAPCE	OFF
SW11	PAUSE	OFF
SW12	SHUFFLE	OFF
SW13	CHECK	OFF
SW14	SEARCH FORWARD	OFF
SW15	AMS FORWARD	OFF
SW16	DISPLAY	OFF
SW17	STOP	OFF
SW18	CONTINUE	OFF
SW401	LIMIT	OFF
SW901	LOADING	OFF

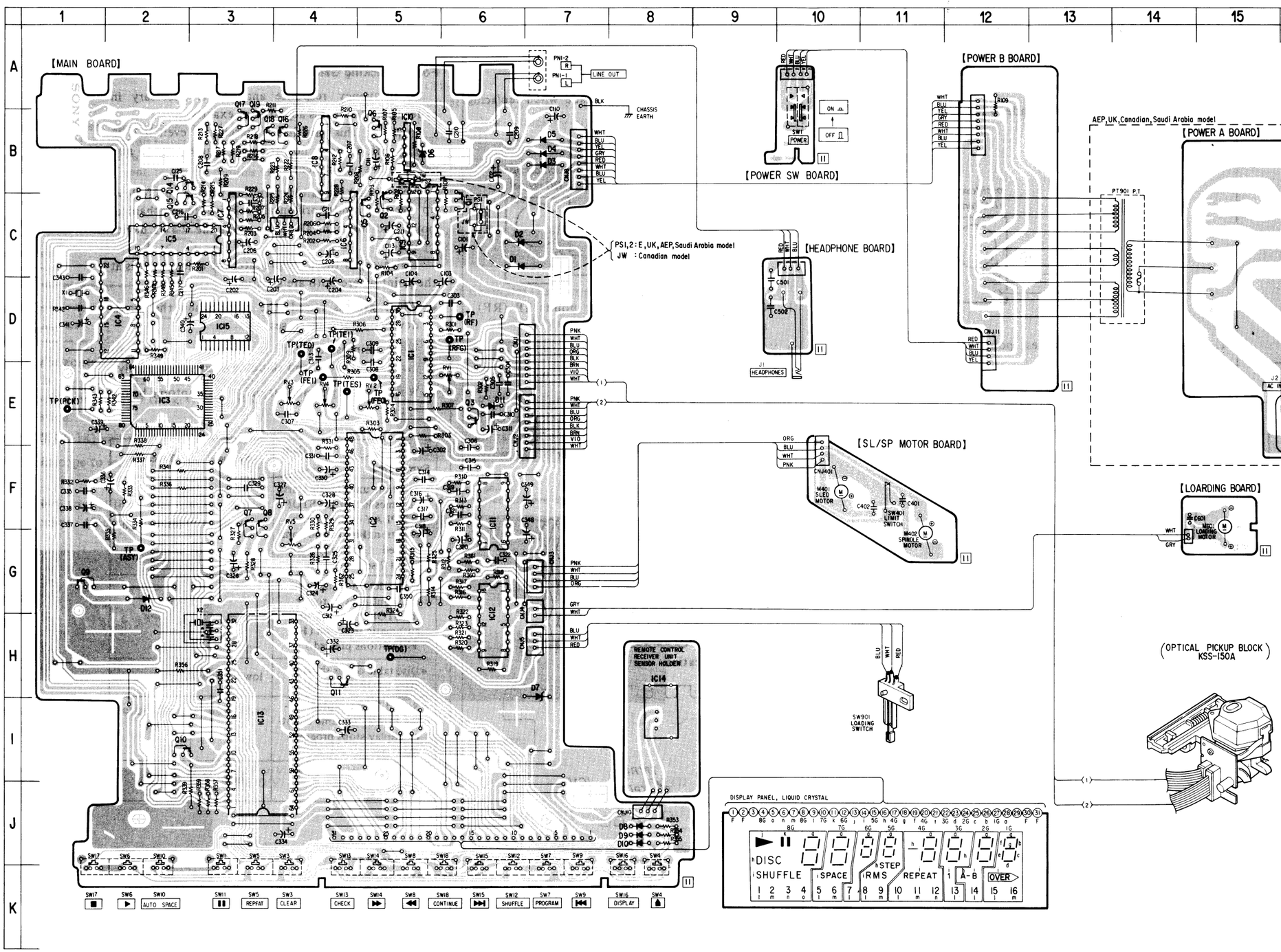
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

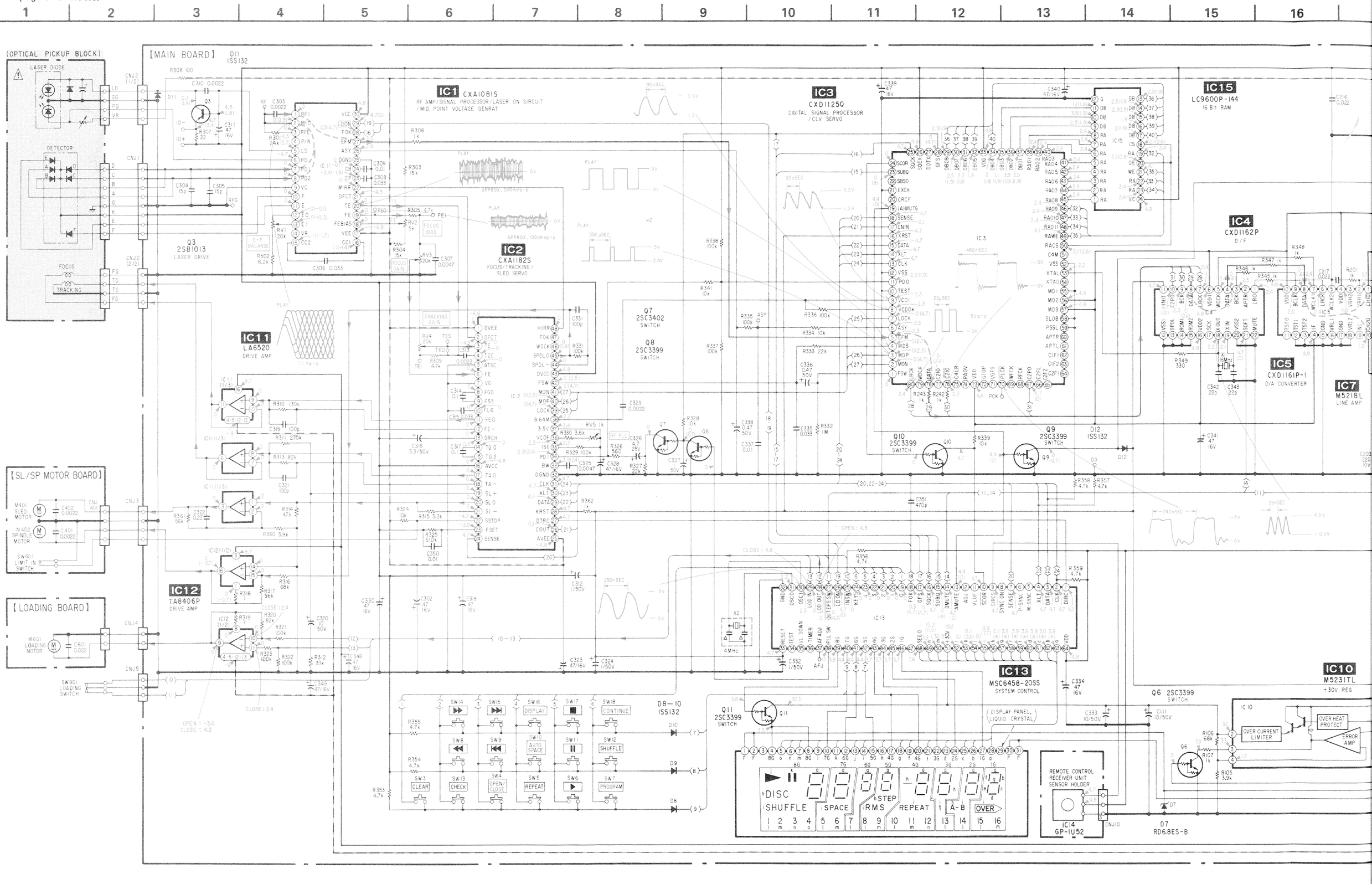
• SEMICONDUCTOR LOCATION

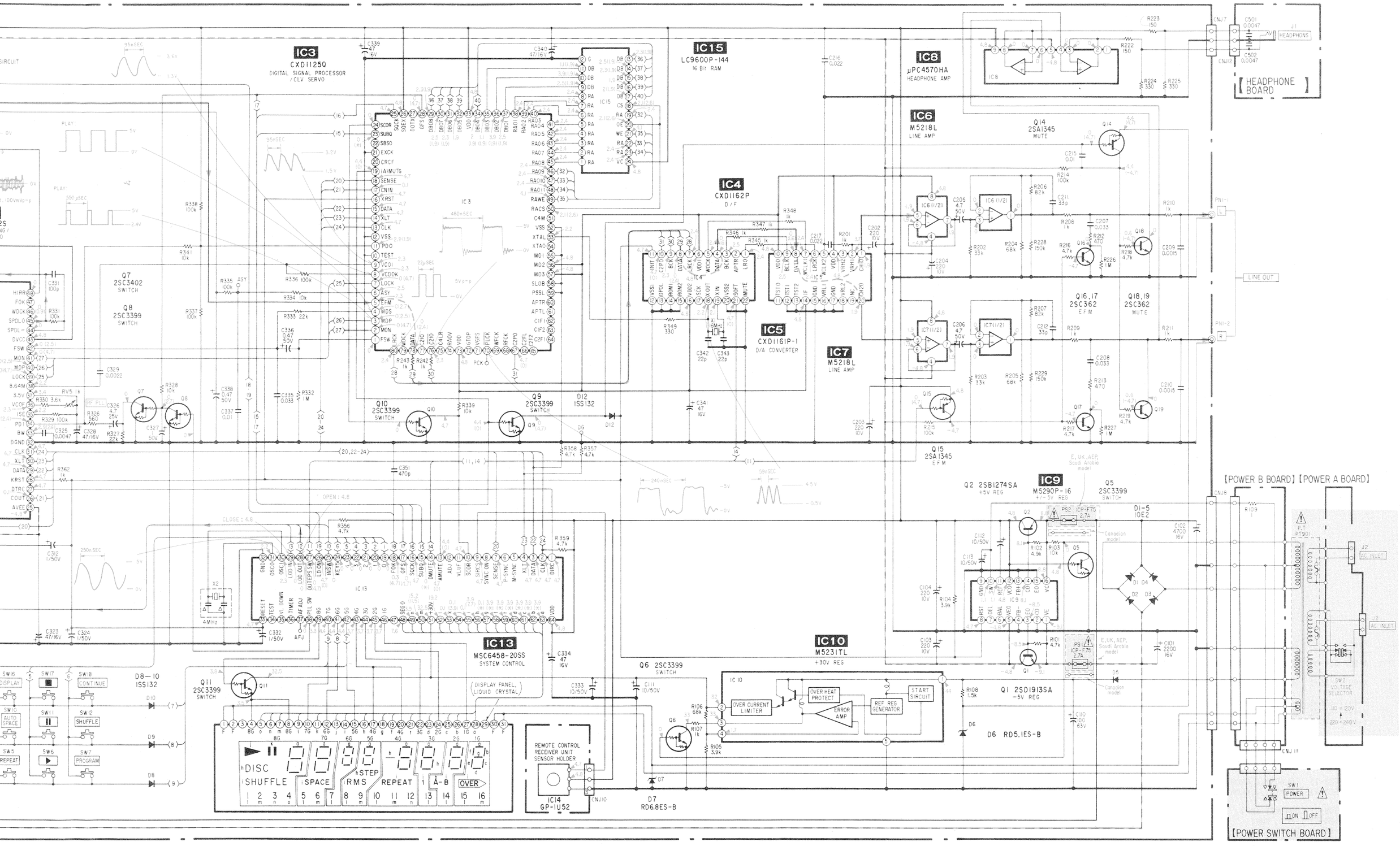
Ref. No.	Location
D1	C-6
D2	C-6
D3	B-7
D4	B-7
D5	B-7
D6	B-5
D7	H-7
D8	J-8
D9	J-8
D10	J-8
D11	E-6
D12	G-2
IC1	D-5
IC2	F-5
IC3	E-2
IC4	D-2
IC5	C-2
IC6	C-4
IC7	C-3
IC8	B-4
IC9	C-5
IC10	B-5
IC11	F-6
IC12	H-6
IC13	I-3
IC14	I-8
IC15	D-3
Q1	C-6
Q2	C-5
Q3	E-6
Q5	C-5
Q6	B-5
Q7	F-3
Q8	F-3
Q9	G-1
Q10	I-2
Q11	H-4
Q14	B-2
Q15	C-2
Q16	B-4
Q17	B-3
Q18	B-3
Q19	B-3

MC-Service


【MAIN BOARD】
【POWER SW BOARD】
【HEADPHONE BOARD】
【POWER B BOARD】
【SL/SP MOTOR BOARD】
【LOARDING BOARD】
AEP,UK,Canadian,Saudi Arabia model
【POWER A BOARD】
E model
【POWER A BOARD】
(OPTICAL PICKUP BLOCK KSS-150A)
PSI,2:E,UK,AEP,Saudi Arabia model
JW :Canadian model
LINE OUT
CHASSIS EARTH
ON
OFF
POWER
HEADPHONES
AC INLET
VOLTAGE SELECTOR
110 - 120V
220 - 240V
REMOTE CONTROL RECEIVER UNIT SENSOR HOLDER
SW901 LOADING SWITCH
DISPLAY PANEL, LIQUID CRYSTAL
DISC
SHUFFLE
SPACE
RMS
STEP
REPEAT
A-B
OVER
AUTO SPACE
REPEAT
CLEAR
CHECK
CONTINUE
SHUFFLE
PROGRAM
DISPLAY

• See page 8 for notes.




IC3
CXD1125Q
DIGITAL SIGNAL PROCESSOR /CLV SERVO
IC15
LC9600P-144
16 Bit RAM
IC8
μPC4570HA
HEADPHONE AMP
IC6
M5218L
LINE AMP
Q14
2SA1345
MUTE
IC4
CXD1162P
D/F
IC5
CXD1161P-1
D/A CONVERTER
IC7
M5218L
LINE AMP
Q7
2SC3402
SWITCH
Q8
2SC3399
SWITCH
Q10
2SC3399
SWITCH
Q9
2SC3399
SWITCH
D12
1SS132
Q16,17
2SC362
E.F.M
Q18,19
2SC362
MUTE
Q15
2SA1345
E.F.M
Q2 2SB1274SA
+5V REG
IC9
M5290P-16
+/-5V REG
Q5
2SC3399
SWITCH
IC13
MSC6458-20SS
SYSTEM CONTROL
IC10
M5231TL
+30V REG
Q11
2SC3399
SWITCH
Q6 2SC3399
SWITCH
Q1 2SD1913SA
-5V REG
D6 RD5.1ES-B
D7
RD6.8ES-B
D8-10
1SS132
IC14
GP-1U52
REMOTE CONTROL RECEIVER UNIT SENSOR HOLDER
DISPLAY PANEL, (LIQUID CRYSTAL)
HEADPHONS
HEADPHONE BOARD
LINE OUT
【POWER B BOARD】【POWER A BOARD】
【POWER SWITCH BOARD】
OVER CURRENT LIMITER
OVER HEAT PROTECT
ERROR AMP
REF REG GENERATOR
START SIRCUIT
DISC
SHUFFLE
SPACE
STEP
RMS
REPEAT
A-B
OVER
CONTINUE
SHUFFLE
PROGRAM
DISPLAY
AUTO SPACE
REPEAT
VOLTAGE SELECTOR
110 - 120V
220 - 240V
E, UK, AEP, Saudi Arabia model
Canadian model

SECTION 3
EXPLODED VIEWS AND PARTS LIST

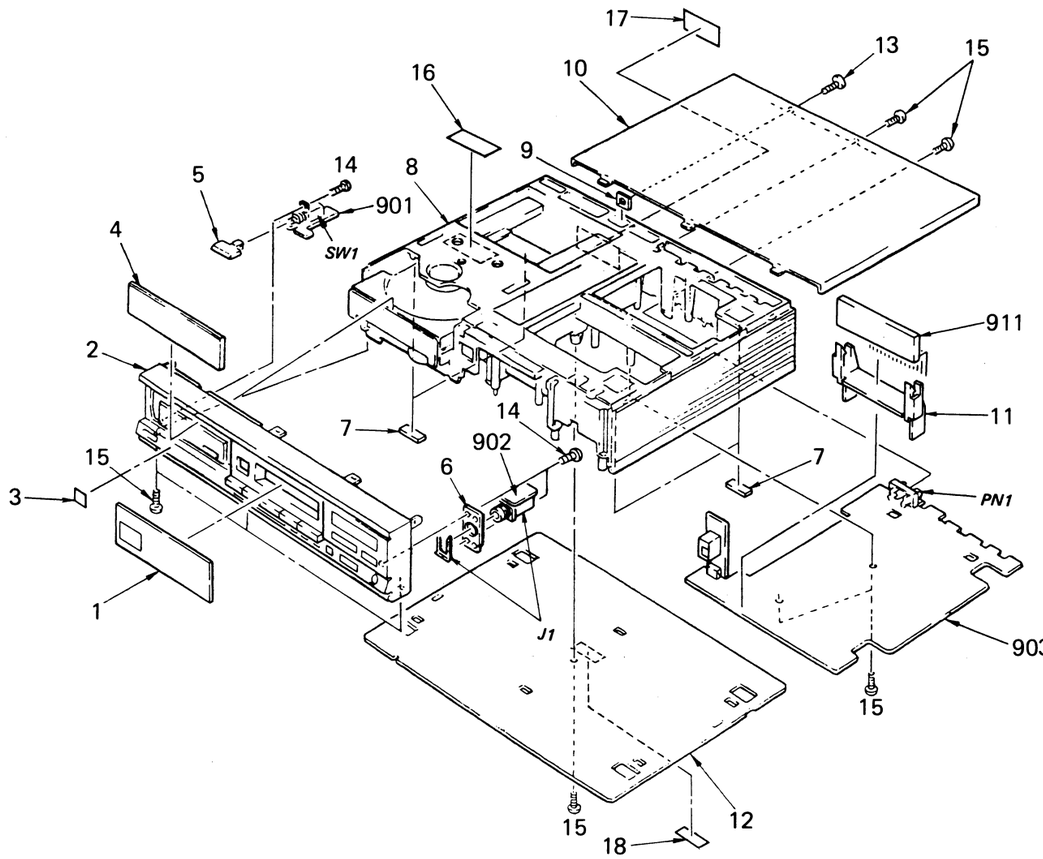
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts' Color

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

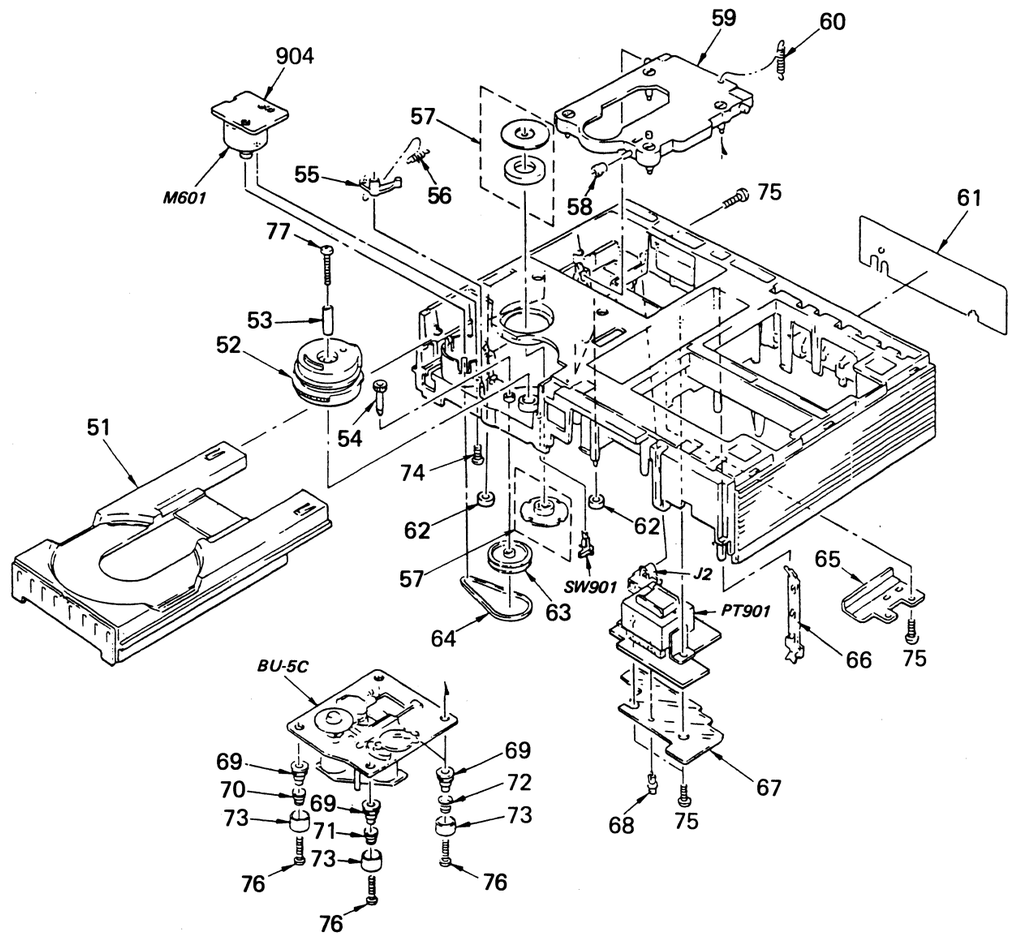
Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

(1) CABINET ASSEMBLY



No.	Part No.	Description	Remarks
1	4-922-614-01	PLATE, INDICATION	
2	X-4917-535-1	(GRAY:E,Canadian,Saudi Arabia) ....PANEL ASSY, FRONT	
	X-4917-536-1	(GRAY:AEP,UK).....PANEL ASSY, FRONT	
	X-4917-537-1	(BLACK:AEP).....PANEL ASSY, FRONT	
	X-4917-540-1	(BLACK:E,Canadian)...PANEL ASSY, FRONT	
3	3-703-713-41	STICKER, SONY SYMBOL (10)	
4	4-922-609-01	(GRAY)....PANEL, LOADING	
	4-922-609-11	(BLACK)...PANEL, LOADING	
5	4-917-525-11	(BLACK)...KNOB, POWER	
	4-917-525-41	(GRAY)....KNOB, POWER	
6	*4-922-608-01	BRACKET (HP)	
7	4-917-524-01	FELT, FOOT	
8	X-4917-533-1	FRAME ASSY	
9	*4-918-670-01	SUPPORT, GROUND	
10	4-917-536-01	(BLACK)...CASE	
	4-917-536-31	(GRAY)....CASE	
11	*4-922-613-01	HOLDER	
12	*4-917-535-01	PLATE, BOTTOM	
13	3-703-685-21	SCREW (+BV 3X8)	
14	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
15	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
16	*4-885-843-02	(AEP,E,UK,Saudi Arabia) ...LABEL, CAUTION, LASER	
17	*4-885-838-00	(AEP,E,UK,Saudi Arabia)...LABEL, CLASS 1	
18	3-703-079-21	(UK)....LABEL, CAUTION (BACK)	
901	*1-623-668-11	PC BOARD, POWER SW	
902	*1-623-669-11	PC BOARD, HEADPHONE	
903	*A-4651-147-A	(AEP,UK).....MOUNTED PCB, MAIN	
	*A-4651-148-A	(E,Saudi Arabia)...MOUNTED PCB, MAIN	
	*A-4651-165-A	(Canadian).....MOUNTED PCB, MAIN	
911	1-519-440-11	INDICATOR TUBE, FLUORESCENT	

(2) FRAME ASSEMBLY

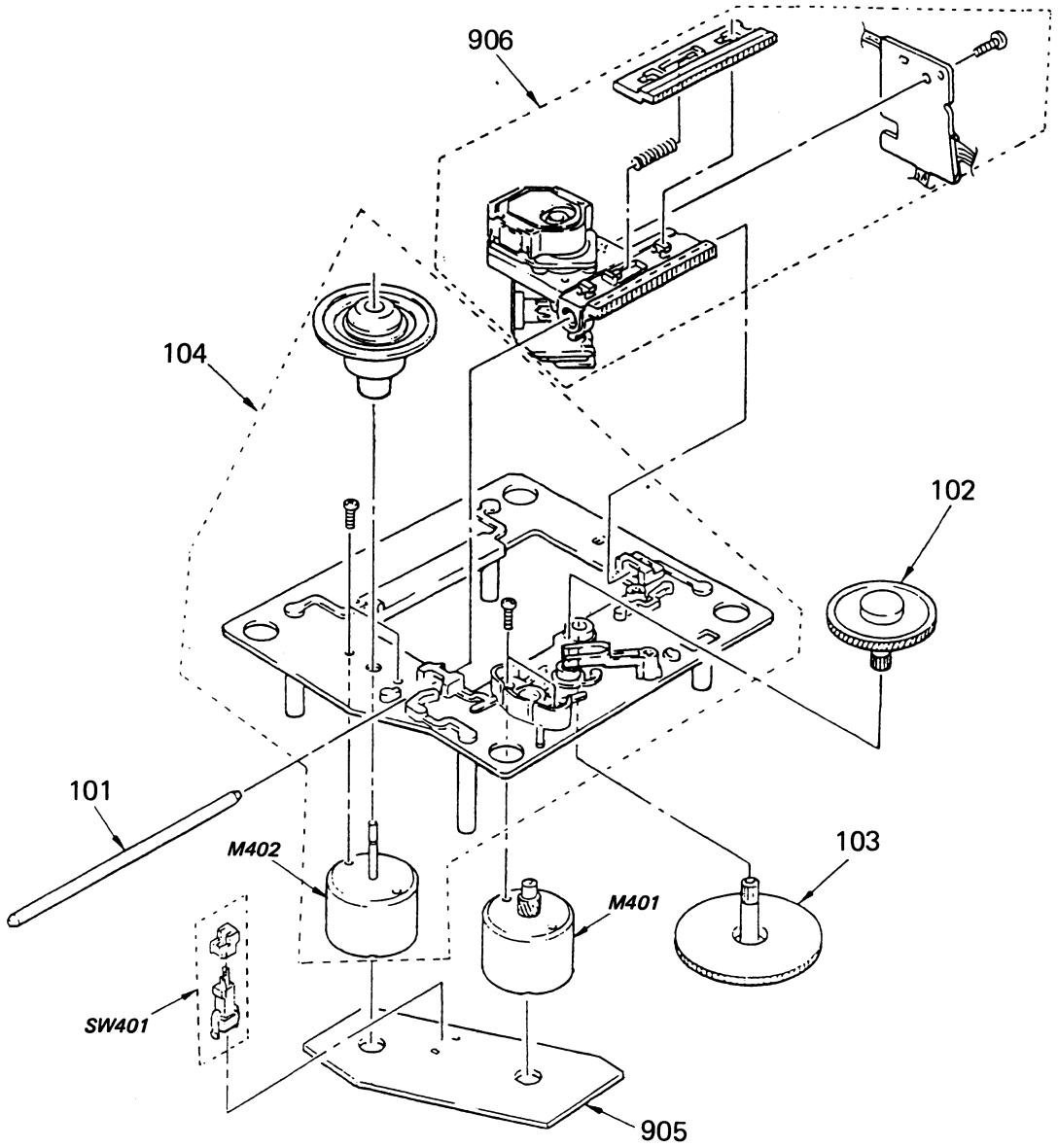


No.	Part No.	Description	Remarks
51	*4-922-604-01	TABLE, DISK	
52	4-917-534-01	GEAR (A), LOADING	
53	*4-917-523-01	COLLAR, CAM	
54	4-917-516-01	GEAR (B), LOADING	
55	4-917-519-01	LEVER, SET	
56	4-917-514-01	SPRING, TENSION	
57	A-4665-024-A	MAGNET ASSY	
58	4-917-515-01	ROLLER	
59	4-917-537-01	BASE, FLOATING	
60	4-917-526-01	SPRING, TENSION	
61	4-918-695-01	(AEP).....PLATE, INDICATION	
	4-918-696-01	(UK).....PLATE, INDICATION	
	4-918-697-01	(Canadian).....PLATE, INDICATION	
	4-918-698-01	(E,Saudi Arabia)...PLATE, INDICATION	
62	*3-576-990-01	CUSHION	
63	4-917-521-01	PULLEY, LOADING	
64	4-917-522-01	BELT	
65	*4-917-517-01	GUIDE, LEAD	
66	*4-917-511-01	PLATE, GROUND	
67	4-917-510-01	SHEET, INSULATING	
68	*3-531-576-11	RIVET	
69	4-917-562-01	INSULATOR	
70	4-917-541-01	SPRING (B)	
71	4-918-669-01	SPRING (W)	
72	4-917-507-01	SPRING (H)	
73	4-917-508-01	HOLDER, SP	
74	7-621-759-30	+PSW, 2.6X5	
75	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
76	7-685-535-19	SCREW +BTP 2.6X10 TYPE2 N-S	
77	7-685-552-19	SCREW +BTP 3X25 TYPE2 N-S	
904	*1-620-603-11	PC BOARD, LOADING MOTOR	
M601	A-4608-330-A	MOTOR ASSY (LOADING)	
PT901⚠	1-449-024-11	(Canadian).....TRANSFORMER, POWER	
PT901⚠	1-449-025-11	(AEP).....TRANSFORMER, POWER	
PT901⚠	1-449-026-11	(E,Saudi Arabia)...TRANSFORMER, POWER	
SW901	1-570-203-11	SWITCH, LEAF (LOADING)	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

(3) PICKUP ASSEMBLY (BU-5C)



No.	Part No.	Description	Remarks
101	4-917-565-01	SHAFT, SLED	
102	4-917-567-01	GEAR (M)	
103	4-917-564-01	GEAR (P), FLATNESS	
104	X-4917-523-1	BASE ASSY (SPINDLE MOTOR M402)	
905	*1-624-322-11	PC BOARD, SL/SP MOTOR	
906	⚠8-848-062-01	PICKUP, OPTICS KSS-150A	
M401	X-4917-504-1	MOTOR ASSY (SLED)	
SW401	1-571-274-11	SWITCH, LEAF (LIMIT)	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

SECTION 4
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			
901	*1-623-668-11	PC BOARD, POWER SW			
902	*1-623-669-11	PC BOARD, HEADPHONE			
903	*A-4651-147-A	(AEP,UK).....MOUNTED PCB, MAIN			
	*A-4651-148-A	(E,Saudi Arabia)...MOUNTED PCB, MAIN			
	*A-4651-165-A	(Canadian).....MOUNTED PCB, MAIN			
904	*1-620-603-11	PC BOARD, LOADING MOTOR			
905	*1-624-322-11	PC BOARD, SL/SP MOTOR			
906	⚠8-848-062-01	PICKUP, OPTICS KSS-150A			
911	1-519-440-11	INDICATOR TUBE, FLUORESCENT			
C101	1-124-556-11	ELECT	2200MF	20%	16V
C102	1-124-898-11	ELECT	4700MF	20%	16V
C103	1-124-674-91	ELECT	220MF	20%	10V
C104	1-124-674-91	ELECT	220MF	20%	10V
C110	1-124-572-11	ELECT	100MF	20%	63V
C111	1-123-875-11	ELECT	10MF	20%	50V
C112	1-123-875-11	ELECT	10MF	20%	50V
C113	1-123-875-11	ELECT	10MF	20%	50V
C202	1-124-674-91	ELECT	220MF	20%	10V
C203	1-124-674-91	ELECT	220MF	20%	10V
C204	1-124-674-91	ELECT	220MF	20%	10V
C205	1-123-369-00	ELECT	4.7MF	20%	50V
C206	1-123-369-00	ELECT	4.7MF	20%	50V
C207	1-136-159-00	FILM	0.033MF	5%	50V
C208	1-136-159-00	FILM	0.033MF	5%	50V
C209	1-161-374-11	CERAMIC	0.0015MF	20%	16V
C210	1-161-374-11	CERAMIC	0.0015MF	20%	16V
C211	1-162-211-31	CERAMIC	33PF	5%	50V
C212	1-162-211-31	CERAMIC	33PF	5%	50V
C215	1-161-379-00	CERAMIC	0.01MF	20%	16V
C216	1-161-494-00	CERAMIC	0.022MF		25V
C217	1-161-494-00	CERAMIC	0.022MF		25V
C302	1-124-477-11	ELECT	47MF	20%	16V
C303	1-161-375-00	CERAMIC	0.0022MF	20%	16V
C304	1-162-203-31	CERAMIC	15PF	5%	50V
C305	1-162-203-31	CERAMIC	15PF	5%	50V
C306	1-136-159-00	FILM	0.033MF	5%	50V
C307	1-161-377-00	CERAMIC	0.0047MF	30%	16V
C308	1-136-159-00	FILM	0.033MF	5%	50V
C309	1-136-153-00	FILM	0.01MF	5%	50V
C310	1-161-375-00	CERAMIC	0.0022MF	20%	16V
C311	1-124-477-11	ELECT	47MF	20%	16V
C312	1-124-499-11	ELECT	1MF	20%	50V
C313	1-161-375-00	CERAMIC	0.0022MF	20%	16V
C314	1-136-165-00	FILM	0.1MF	5%	50V
C315	1-136-159-00	FILM	0.033MF	5%	50V

Ref.No.	Part No.	Description			
C316	1-123-382-00	ELECT	3.3MF	20%	50V
C317	1-136-165-00	FILM	0.1MF	5%	50V
C318	1-124-477-11	ELECT	47MF	20%	16V
C319	1-162-282-31	CERAMIC	100PF	10%	50V
C320	1-123-875-11	ELECT	10MF	20%	50V
C321	1-162-282-31	CERAMIC	100PF	10%	50V
C322	1-136-169-00	FILM	0.22MF	5%	50V
C323	1-124-477-11	ELECT	47MF	20%	16V
C324	1-124-499-11	ELECT	1MF	20%	50V
C325	1-161-377-00	CERAMIC	0.0047MF	30%	16V
C326	1-123-369-00	ELECT	4.7MF	20%	25V
C327	1-124-499-11	ELECT	1MF	20%	50V
C328	1-124-477-11	ELECT	47MF	20%	16V
C329	1-161-375-00	CERAMIC	0.0022MF	20%	16V
C330	1-124-477-11	ELECT	47MF	20%	16V
C331	1-162-282-31	CERAMIC	100PF	10%	50V
C332	1-124-499-11	ELECT	1MF	20%	50V
C333	1-123-875-11	ELECT	10MF	20%	50V
C334	1-124-477-11	ELECT	47MF	20%	16V
C335	1-136-159-00	FILM	0.033MF	5%	50V
C336	1-124-902-00	ELECT	0.47MF	20%	50V
C337	1-161-379-00	CERAMIC	0.01MF	20%	16V
C338	1-124-902-00	ELECT	0.47MF	20%	50V
C339	1-124-477-11	ELECT	47MF	20%	16V
C340	1-124-236-00	ELECT	47MF	20%	16V
C341	1-124-477-11	ELECT	47MF	20%	16V
C342	1-162-207-31	CERAMIC	22PF	5%	50V
C343	1-162-207-31	CERAMIC	22PF	5%	50V
C348	1-124-236-00	ELECT	47MF	20%	16V
C349	1-124-236-00	ELECT	47MF	20%	16V
C350	1-161-379-00	CERAMIC	0.01MF	20%	16V
C351	1-162-290-31	CERAMIC	470PF	10%	50V
C401	1-106-351-00	MYLAR	0.0022MF	5%	50V
C402	1-106-351-00	MYLAR	0.0022MF	5%	50V
C501	1-161-377-00	CERAMIC	0.0047MF	30%	16V
C502	1-161-377-00	CERAMIC	0.0047MF	30%	16V
C601	1-136-157-00	FILM	0.022MF	5%	50V
CNJ1	*1-564-724-11	PIN, CONNECTOR (SMALL TYPE) 8P			
CNJ2	*1-564-724-31	PIN, CONNECTOR (SMALL TYPE) 8P			
CNJ3	*1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P			
CNJ4	*1-564-336-00	PIN, CONNECTOR 2P			
CNJ5	*1-564-337-00	PIN, CONNECTOR 3P			
CNJ7	*1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P			
CNJ8	*1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P			
CNJ10	*1-566-165-11	CONNECTOR, BOARD TO BOARD 3P			
CNJ11	*1-566-779-11	PIN, CONNECTOR (PC BOARD) 4P			

Ref.No.	Part No.	Description
CNJ12	*1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P
CNJ401	*1-564-720-21	PIN, CONNECTOR (SMALL TYPE) 4P
D1	8-719-200-77	DIODE 10E2N
D2	8-719-200-77	DIODE 10E2N
D3	8-719-200-77	DIODE 10E2N
D4	8-719-200-77	DIODE 10E2N
D5	8-719-200-77	DIODE 10E2N
D6	8-719-109-83	DIODE RD5.1ES-B
D7	8-719-109-95	DIODE RD6.8ES-B
D8	8-719-940-76	DIODE 1SS132
D9	8-719-940-76	DIODE 1SS132
D10	8-719-940-76	DIODE 1SS132
D11	8-719-940-76	DIODE 1SS132
D12	8-719-940-76	DIODE 1SS132
IC1	8-752-031-80	IC CXA1081S
IC2	8-752-032-33	IC CXA1182S
IC3	8-752-322-04	IC CXD1125Q
IC4	8-759-946-62	IC CXD1162P
IC5	8-759-805-29	IC CXD1161P-1
IC6	8-759-600-02	IC M5218L
IC7	8-759-600-02	IC M5218L
IC8	8-759-106-61	IC UPC4570HA
IC9	8-759-630-21	IC M5290P-16
IC10	8-759-605-43	IC M5231TL
IC11	8-759-805-18	IC LA6520
IC12	8-759-208-96	IC TA8406P
IC13	8-759-945-86	IC MSC6458-18SS
IC14	8-749-920-03	IC GP1U52
IC15	1-808-060-11	IC LC9600P-144
J1	1-563-485-21	JACK, LARGE TYPE (HEADPHONES)
J2	⚠1-526-931-11	(AEP,UK).....INLET, AC
J2	⚠1-526-929-11	(E,Saudi Arabia)...INLET, AC
J2	⚠1-526-930-11	(Canadian).....INLET, AC
M401	X-4917-504-1	MOTOR ASSY (SLED)
M402	X-4917-523-1	BASE ASSY (SPINDLE MORO)
M601	A-4608-330-A	MOTOR ASSY (LOADING)
PN1	*1-562-999-21	JACK, PIN 2P (LINE OUT)
PS1	⚠1-532-686-00	(AEP,UK,E,Saudi Arabia)...LINK, IC (ICP-F75 2.7A)
PS2	⚠1-532-686-00	(AEP,UK,E,Saudi Arabia)...LINK, IC (ICP-F75 2.7A)
PT901	⚠1-449-024-11	(Canadian).....TRANSFORMER, POWER
PT901	⚠1-449-025-11	(AEP).....TRANSFORMER, POWER
PT901	⚠1-449-026-11	(E,Saudi Arabia)...TRANSFORMER, POWER

Ref.No.	Part No.	Description
Q1	8-729-808-76	TRANSISTOR 2SD1913SA-Q
Q2	8-729-808-72	TRANSISTOR 2SB1274SA-Q
Q3	8-729-801-83	TRANSISTOR 2SB1013
Q5	8-729-806-38	TRANSISTOR 2SC3399
Q6	8-729-806-38	TRANSISTOR 2SC3399
Q7	8-729-806-28	TRANSISTOR 2SC3402
Q8	8-729-806-38	TRANSISTOR 2SC3399
Q9	8-729-806-38	TRANSISTOR 2SC3399
Q10	8-729-806-38	TRANSISTOR 2SC3399
Q11	8-729-806-38	TRANSISTOR 2SC3399
Q14	8-729-806-20	TRANSISTOR 2SA1345
Q15	8-729-806-20	TRANSISTOR 2SA1345
Q16	8-729-107-91	TRANSISTOR 2SC3622-L
Q17	8-729-107-91	TRANSISTOR 2SC3622-L
Q18	8-729-107-91	TRANSISTOR 2SC3622-L
Q19	8-729-107-91	TRANSISTOR 2SC3622-L

R101	1-249-425-11	CARBON	4.7K	5%	1/4W
R102	1-249-425-11	CARBON	4.7K	5%	1/4W
R103	1-249-429-11	CARBON	10K	5%	1/4W
R104	1-249-424-11	CARBON	3.9K	5%	1/4W
R105	1-249-424-11	CARBON	3.9K	5%	1/4W
R106	1-249-439-11	CARBON	68K	5%	1/4W
R107	1-249-417-11	CARBON	1K	5%	1/4W
R108	1-249-431-11	CARBON	15K	5%	1/4W
R109	1-249-381-11	CARBON	1	5%	1/4W
R201	1-259-428-11	CARBON	1K	5%	1/6W
R202	1-259-464-11	CARBON	33K	5%	1/6W
R203	1-259-464-11	CARBON	33K	5%	1/6W
R204	1-259-472-11	CARBON	68K	5%	1/6W
R205	1-259-472-11	CARBON	68K	5%	1/6W
R206	1-259-474-11	CARBON	82K	5%	1/6W
R207	1-259-474-11	CARBON	82K	5%	1/6W
R208	1-259-428-11	CARBON	1K	5%	1/6W
R209	1-259-428-11	CARBON	1K	5%	1/6W
R210	1-259-428-11	CARBON	1K	5%	1/6W
R211	1-259-428-11	CARBON	1K	5%	1/6W
R212	1-259-420-11	CARBON	470	5%	1/6W
R213	1-259-420-11	CARBON	470	5%	1/6W
R214	1-249-441-11	CARBON	100K	5%	1/4W
R215	1-249-441-11	CARBON	100K	5%	1/4W
R216	1-249-425-11	CARBON	4.7K	5%	1/4W
R217	1-249-425-11	CARBON	4.7K	5%	1/4W
R218	1-249-425-11	CARBON	4.7K	5%	1/4W
R219	1-249-425-11	CARBON	4.7K	5%	1/4W
R222	1-259-408-11	CARBON	150	5%	1/6W
R223	1-259-408-11	CARBON	150	5%	1/6W

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Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			
R224	1-259-416-11	CARBON	330	5%	1/6W
R225	1-259-416-11	CARBON	330	5%	1/6W
R226	1-259-500-11	CARBON	1M	5%	1/6W
R227	1-259-500-11	CARBON	1M	5%	1/6W
R228	1-259-480-11	CARBON	150K	5%	1/6W
R229	1-259-480-11	CARBON	150K	5%	1/6W
R301	1-215-454-00	CARBON	24K	5%	1/4W
R302	1-249-428-11	CARBON	8.2K	5%	1/4W
R303	1-249-431-11	CARBON	15K	5%	1/4W
R304	1-249-431-11	CARBON	15K	5%	1/4W
R305	1-249-425-11	CARBON	4.7K	5%	1/4W
R306	1-249-417-11	CARBON	1K	5%	1/4W
R307	1-249-397-11	CARBON	22	5%	1/4W
R308	1-249-405-11	CARBON	100	5%	1/4W
R309	1-249-425-11	CARBON	4.7K	5%	1/4W
R310	1-215-472-00	CARBON	130K	5%	1/4W
R311	1-215-479-00	CARBON	270K	5%	1/4W
R312	1-249-435-11	CARBON	33K	5%	1/4W
R313	1-249-440-11	CARBON	82K	5%	1/4W
R314	1-249-425-11	CARBON	4.7K	5%	1/4W
R315	1-249-423-11	CARBON	3.3K	5%	1/4W
R316	1-249-439-11	CARBON	68K	5%	1/4W
R317	1-249-438-11	CARBON	56K	5%	1/4W
R318	1-249-381-11	CARBON	1	5%	1/4W
R319	1-249-381-11	CARBON	1	5%	1/4W
R320	1-249-440-11	CARBON	82K	5%	1/4W
R321	1-249-441-11	CARBON	100K	5%	1/4W
R322	1-249-441-11	CARBON	100K	5%	1/4W
R323	1-249-441-11	CARBON	100K	5%	1/4W
R324	1-249-429-11	CARBON	10K	5%	1/4W
R325	1-215-486-00	CARBON	510K	5%	1/4W
R326	1-249-414-11	CARBON	560	5%	1/4W
R327	1-249-433-11	CARBON	22K	5%	1/4W
R328	1-249-429-11	CARBON	10K	5%	1/4W
R329	1-249-441-11	CARBON	100K	5%	1/4W
R330	1-215-434-00	METAL	3.6K	1%	1/6W
R331	1-249-441-11	CARBON	100K	5%	1/4W
R332	1-215-493-00	CARBON	1M	5%	1/4W
R333	1-249-433-11	CARBON	22K	5%	1/4W
R334	1-249-429-11	CARBON	10K	5%	1/4W
R335	1-249-441-11	CARBON	100K	5%	1/4W
R336	1-249-441-11	CARBON	100K	5%	1/4W
R337	1-215-469-00	METAL	100K	1%	1/6W
R338	1-215-469-00	METAL	100K	1%	1/6W
R339	1-249-429-11	CARBON	10K	5%	1/4W
R341	1-249-429-11	CARBON	10K	5%	1/4W
R342	1-249-417-11	CARBON	1K	5%	1/4W
R343	1-249-417-11	CARBON	1K	5%	1/4W
R345	1-249-417-11	CARBON	1K	5%	1/4W
R346	1-249-417-11	CARBON	1K	5%	1/4W
R347	1-249-417-11	CARBON	1K	5%	1/4W
R348	1-249-417-11	CARBON	1K	5%	1/4W
R349	1-259-416-11	CARBON	330	5%	1/6W
R353	1-249-425-11	CARBON	4.7K	5%	1/4W
R354	1-249-425-11	CARBON	4.7K	5%	1/4W
R355	1-249-425-11	CARBON	4.7K	5%	1/4W
R356	1-249-425-11	CARBON	4.7K	5%	1/4W

Ref.No.	Part No.	Description			
R357	1-249-425-11	CARBON	4.7K	5%	1/4W
R358	1-249-425-11	CARBON	4.7K	5%	1/4W
R359	1-249-425-11	CARBON	4.7K	5%	1/4W
R360	1-249-424-11	CARBON	3.9K	5%	1/4W
R361	1-249-438-11	CARBON	56K	5%	1/4W
R362	1-249-417-11	CARBON	1K	5%	1/4W
RV1	1-237-194-21	RES, ADJ, CARBON 20K			
RV2	1-237-192-21	RES, ADJ, CARBON 5K			
RV3	1-237-194-21	RES, ADJ, CARBON 20K			
RV4	1-237-194-21	RES, ADJ, CARBON 20K			
RV5	1-228-990-00	RES, ADJ, METAL GLAZE 1K			
SW1	⚠1-552-928-00	SWITCH, PUSH (POWER)			
SW2	⚠1-570-046-11	(E,Saudi Arabia) ...SWITCH, VOLTAGE CHANG			
SW3	1-571-213-11	SWITCH, KEY BOARD (3 KEY)(CLEAR)			
SW4	1-554-088-00	SWITCH, KEY BOARD (OPEN/CLOSE)			
SW5	1-571-213-11	SWITCH, KEY BOARD (3 KEY)(REPEAT)			
SW6	1-571-213-11	SWITCH, KEY BOARD (3 KEY)(PLAY)			
SW7	1-571-214-11	SWITCH, KEY BOARD (4 KEY)(PROGRAM)			
SW8	1-571-214-11	SWITCH, KEY BOARD (4 KEY) (SEARCH REVERSE)			
SW9	1-571-214-11	SWITCH, KEY BOARD (4 KEY)(AMS REVERSE)			
SW10	1-571-213-11	SWITCH, KEY BOARD (3 KEY)(AUTO SPACE)			
SW11	1-571-213-11	SWITCH, KEY BOARD (3 KEY)(PAUSE)			
SW12	1-571-214-11	SWITCH, KEY BOARD (4 KEY)(SHUFFLE)			
SW13	1-571-214-11	SWITCH, KEY BOARD (4 KEY)(CHECK)			
SW14	1-571-214-11	SWITCH, KEY BOARD (4 KEY) (SEARCH FORWARD)			
SW15	1-571-214-11	SWITCH, KEY BOARD (4 KEY)(AMS FORWARD)			
SW16	1-554-088-11	SWITCH, KEY BOARD (DISPLAY)			
SW17	1-571-213-11	SWITCH, KEY BOARD (3 KEY)(STOP)			
SW18	1-571-214-11	SWITCH, KEY BOARD (4 KEY)(CONTINUE)			
SW401	1-571-274-11	SWITCH, LEAF (LIMIT)			
SW901	1-570-203-11	SWITCH, LEAF (LOADING)			
X1	1-567-908-21	VIBRATOR, CRYSTAL (16MHz)			
X2	1-567-686-11	OSCILLATOR, CERAMIC (4MHz)			

ACCESSORY & PACKING MATERIAL

	1-506-409-00	(Saudi Arabia)...ADAPTOR, CONVERSION
⚠	1-526-565-00	(E)...AC PLUG ADAPTOR
	1-558-543-11	CORD, CONNECTION
⚠	1-555-234-00	(Saudi Arabia)...CORD, POWER
⚠	1-556-280-00	(E).....CORD, POWER
⚠	1-558-032-11	(UK).....CORD, POWER
⚠	1-558-834-11	(Canadian).....CORD, POWER
⚠	1-558-835-11	(AEP).....CORD, POWER
*	3-764-942-11	(E,Saudi Arabia)...INSTRUCTION
*	3-795-629-11	(AEP).....INSTRUCTION
	3-769-600-11	(AEP,UK,Saudi Arabia) ....MANUAL, INSTRUCTION
	3-769-600-21	(Canadian)....MANUAL, INSTRUCTION
	3-769-600-31	(Canadian)....MANUAL, INSTRUCTION
	3-769-600-41	(AEP).....MANUAL, INSTRUCTION
	4-922-616-21	INDIVIDUAL CARTON
	4-922-618-01	CUSHION

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Troubleshooting guide

The following checks will assist in the correction of most problems which you may encounter with your unit. Before going through the check list below, first refer back to the connections and operating procedures.

Symptom	Cause	Remedy
Play does not begin	The disc is incorrectly inserted.	Insert the disc correctly.
	The disc is extremely dirty.	Clean the disc.
	The disc is inserted upside down.	Insert the disc correctly.
	▮▮ has been pressed.	Press ▮▮ again to release pause.
	Moisture condensation.	Leave the player turned on for about an hour.
No sound from one or both channels	Incorrect connections.	Connect properly.

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Audio Group

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